

**WANTED: ASIAN LONGHORNED BEETLE**

# **The Asian Longhorned Beetle**

**Prepared by  
Rutgers Cooperative Extension  
in cooperation with  
USDA Forest Service Northeastern Area  
State and Private Forestry**

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Rutgers Cooperative Extension**

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# WANTED: ASIAN LONGHORNED BEETLE

- The Asian Longhorned Beetle (*Anoplophora glabripennis*) is a relatively new insect pest that poses a serious risk to our landscapes, forests, and woodland trees.
- Asian Longhorned Beetle (ALB) has the potential to cause more damage to trees than Gypsy Moth, Dutch Elm Disease, and Chestnut Blight combined.



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## Why Should We be Concerned ?

- ALB attacks and kills a wide range of native trees including maples, elms, birch and ash.
- There are no natural enemies or insecticides to effectively control ALB.



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## History

- ALB is a native of China, Korea and Taiwan.
- ALB entered the USA at shipping ports in wooden pallets and crates infested with ALB.



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**Found in 2002 in Jersey City, & again in 2004 in Carteret, Woodbridge, Rahway and Linden, NJ .**

**First discovered in 1996 in Brooklyn, NY and in 1998 in Chicago, IL.**



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## How Does ALB Damage Trees ?



**Feeding damage of adult ALB beetles on Maple leaves is used with other symptoms to confirm presence of ALB. Leaf feeding is not a primary concern.**

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## ALB Damage to Trees

- ALB larvae tunnel through tree stems and branches.
- Repeated damage can lead to dieback of the tree crown and eventual death of the tree.



Tunnels and damage from ALB larvae

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## Why is ALB Difficult to Control ?

- Larvae bore into the hardwood of the tree where pesticides can not penetrate.
- ALB often attack the tops of trees first so signs or symptoms may not be obvious.
- ALB has no known natural enemies in the USA or Canada.



ALB larvae tunnels can severely weaken and kill infested trees

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# Asian Longhorned Beetle Lifecycle



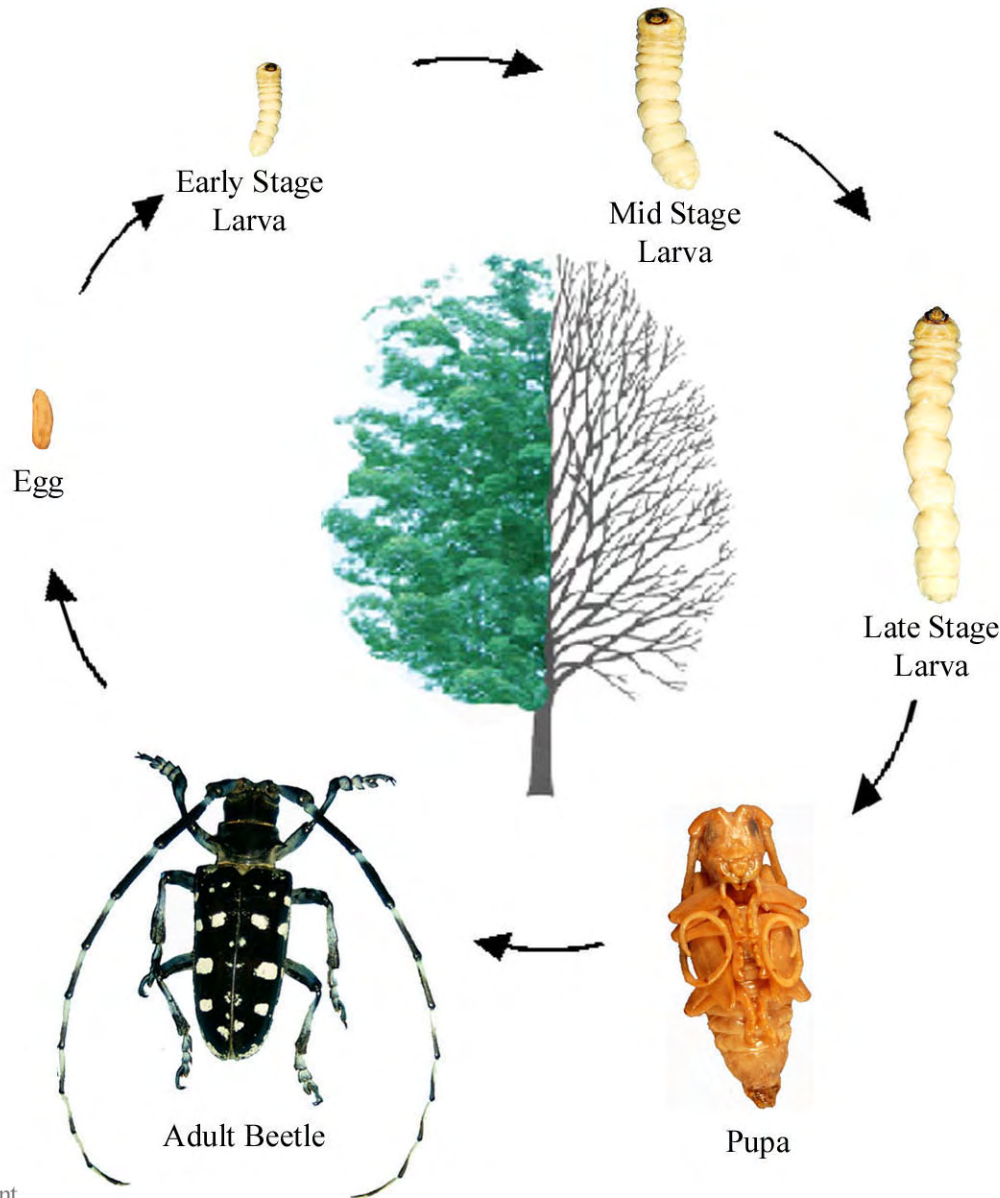
Adults and oviposition scars



Emergence holes



Adult emerging from tree



Larva in tree



Pupal chamber in tree

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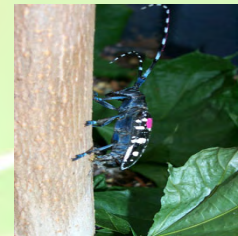
## Reproduction

1. Mating - Males and females travel infrequently, they use physical contact - no known pheromone.
2. After mating, females lay eggs in a shallow dug-out area of the bark.
3. Egg sites are easily sealed by the host tree.
4. Eggs hatch in 10-15 days.

1



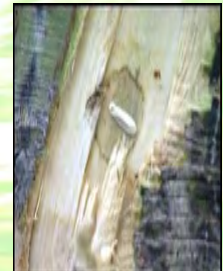
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3



4





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## Larvae

Life Cycle & Biology of *Anoplophora glabripennis*

- Eggs develop into a grub.
- 1st and 2nd instar larvae feed on the cambium layer.
- 3rd, 4th and 5th instars feed and tunnel on the sapwood or heartwood.
- Larval and pupal stages over-winter in the tree.



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## Pupae

Life Cycle & Biology of *Anoplophora glabripennis*

- 5th instar develops into a pupa.
- Pupal stage is approx. 2 to 3 weeks.
- Non-feeding or inactive metamorphosis.
- After pupation, the insect will emerge as an adult, and the cycle begins again.



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## Adult Beetle

- Emerge late Spring to mid Fall.  
(May to October in the Northeast)
- Exit holes -  $\frac{3}{8}$  to  $\frac{5}{8}$  inch in diameter.
- Beetle is  $\frac{3}{4}$  to  $1 \frac{1}{4}$  inches.
- May live for 2 months or more.



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## Adult Beetle

- Feed and mate.
- Females lay between 60 to 120 eggs.
- Adult beetles have 1 generation per year.
- Whitespotted Pine Sawyer and Cottonwood Borer are similar in appearance to ALB.



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**Step 1. Examine susceptible trees in your area.**



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## We Need your Help to Stop ALB ! Three Steps to Protect our Trees

1. Examine susceptible trees in your area.
2. Look for signs of adult beetles or symptoms of beetle damage.
3. Report signs or symptoms to the experts!



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## Most Susceptible Trees

- Norway Maple
- Red Maple
- Silver Maple
- Sugar Maple
- American Elm
- Siberian Elm
- Boxelder
- Horsechestnut



Red Maple

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## Moderately Susceptible Trees

- Black Alder
- Gray Birch
- River Birch
- Paper Birch
- Pussy Willow
- Weeping Willow
- Poplars
- European Mountain Ash



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## Least Susceptible Trees

- Green Ash
- White Ash
- Sycamore
- Rose of Sharon
- Hackberry



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## Resistant Trees Planted in Jersey City

- Apple / Crabapple
- Cherry / Plum
- Pagoda Dogwood
- Hawthorn
- Black Locust
- Mulberry
- Oaks
- Catalpa
- Flowering Dogwood
- Ginkgo
- Redbud
- Tulip Tree
- Honeylocust
- Linden / Basswood
- Magnolia
- Pear
- Black Walnut
- Buckthorn

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**Step 2. Look for signs of adult beetles or symptoms of beetle damage.**



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**Signs of ALB ! Adult Beetles appear from spring to fall. (May to October in the Northeast)**

- Beetles are 1 to 1 1/2 inches long.
- Jet black body with mottled white spots.
- Long antennae 1.5 to 2.5 times body length with black and white bands on each segment.
- Feet have a bluish tinge.

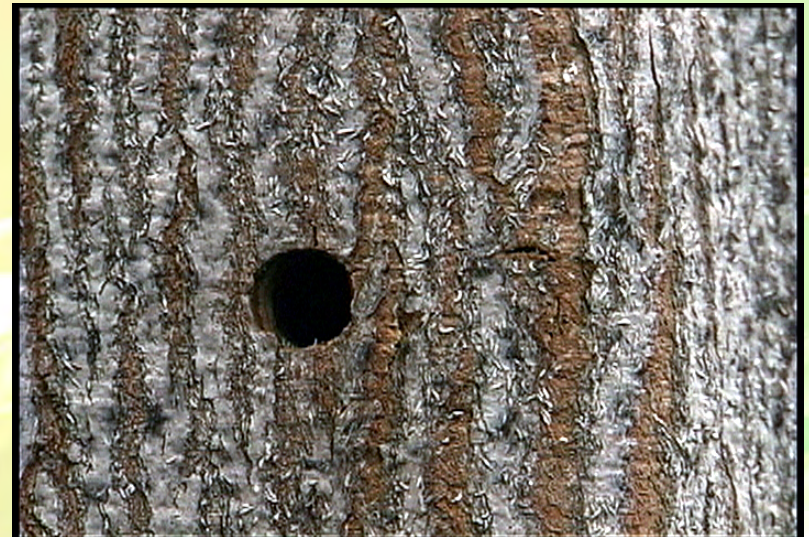


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## Symptoms of ALB ! Holes in Bark

- Beetles bore a 3/8 inch diameter hole or larger in the trunk or branches.
- Smooth “bullet hole” appearance made by adult beetles emerging from the tree.
- Holes deep enough to hold a pen or pencil.



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## Symptoms of ALB !

### Accumulation of Coarse Sawdust

- Frass accumulates around the base of trees and where branches join the main trunk or meet other branches.
- Frass is created by larvae boring into the trunk or branches.



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## Symptoms of ALB ! Pits in the Bark

- Oval to round pits in the bark.
- Female beetles chew out pits and deposit one egg in each pit.



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## Symptoms of ALB ! Oozing Sap

- Sap may flow from egg niches as larvae feed inside of the tree.
- Sap flow more obvious on Maple trees.



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**Step 3. Report signs or symptoms to  
the experts !**



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## Contacts for Reporting ALB

- 1-866-265-0301 in New York
- 1-866-BEETLE-1 in New Jersey
- 1-312-742-3385 in Illinois
- Outside of the above states contact your State Department of Agriculture or for more information log onto [www.aphis.usda.gov](http://www.aphis.usda.gov) Click on "Hot Issues"

WWW.APHIS.USDA.GOV

CLICK HOT ISSUES ALB



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## Research Topics

- How ALB moves in differing landscapes
- New diagnostic signs for early detection
- Methods for aging ALB infestations



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## You Can Make a Difference !

- ALB was spotted in Jersey City, NJ by a member of the general public. He reported his exotic insect sighting to the proper authorities.
- Experts responded rapidly and believe they have contained this specific outbreak.
- ALB has been spotted at various ports of entry throughout the USA. We believe that vigilant inspections by experts have contained the pest, but no one is certain.

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**Keep a watchful eye for ALB.**

**With your help we can stop ALB from  
spreading !**

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## Educational Links for ALB

- <http://www.na.fs.fed.us/fhp/alb/>
- <http://www.rcrc.rutgers.edu/alb/>
- <http://www.aphis.usda.gov/ppq/ep/alb/>
- <http://ceris.purdue.edu/napis/pests/alb/>
- <http://www.uvm.edu/albeetle/research/index.html>

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Questions ?

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## **Production and Scientific Review Team**

**New Jersey Agricultural Experiment Station**

**Rutgers Cooperative Extension**

- **William Hlubik**
- **Richard Weidman**
- **James Marko**
- **Nicholas Polanin**
- **Daniel Kluchinski**
- **David Smela**
- **Mark Vodak**
- **Jason Grabosky**
- **Ann Gould**
- **Richard Buckley**
- **George Hamilton**
- **Madeline Flahive DiNardo**

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A detailed illustration of an Asian Longhorned Beetle is positioned in the upper right corner. The beetle has a dark, segmented body with white spots and a long, thin, segmented antennae that extends towards the center of the slide.

## USDA Review Team

- **Christine Markham, USDA- APHIS  
National ALB Program Director**
- **Barry Emens, USDA - APHIS  
ALB Program Leader for NJ**
- **Noel Schneeberger, USDA Forest Service  
Forest Health Program Leader**
- **Judy Antipin, USDA Forest Service  
Public Affairs Specialist**

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The background of the slide features a soft-focus illustration of green leaves, likely from a plant affected by the Asian Longhorned Beetle, creating a naturalistic and thematic setting.

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**Funding provided by  
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Northeastern Area  
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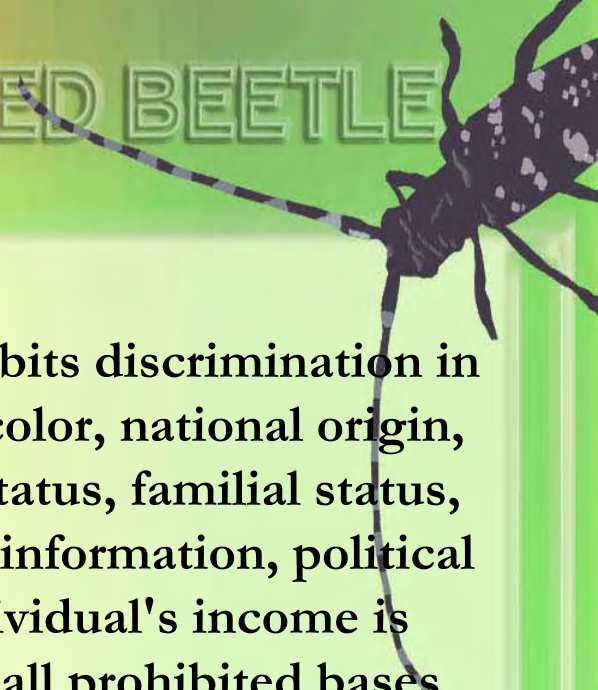


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